




CHAPTER 10 Summary

SECTION 1 What Is Biodiversity?	OBJECTIVES	KEY TERMS
	<ul style="list-style-type: none"> Biodiversity usually refers to the number of different species in a given area. The study of biodiversity starts with the unfinished task of identifying and cataloging all species on Earth. Although scientists disagree about the probable number of species on Earth, they do agree that we need to study biodiversity more thoroughly. Humanity benefits from biodiversity in several ways and perhaps in some unknown ways. 	biodiversity gene keystone species ecotourism
SECTION 2 Biodiversity at Risk	OBJECTIVES	KEY TERMS
	<ul style="list-style-type: none"> Many scientists are now concerned that loss of biodiversity is the most challenging environmental issue we face. The most common cause of extinction today is the destruction of habitats by humans. Unregulated hunting and the introduction of nonnative species also contribute to extinctions. Certain areas of the world contain a greater diversity of species than other areas. An important feature of such areas is that they have a large portion of endemic species. The United States has a very important role in preserving biodiversity through laws and regulations. 	endangered species threatened species exotic species poaching endemic species
SECTION 3 The Future of Biodiversity	OBJECTIVES	KEY TERMS
	<ul style="list-style-type: none"> Most major conservation efforts concentrate on protecting entire ecosystems rather than individual species. The Endangered Species Act establishes protections for endangered and threatened species in the United States. The act has generated some controversy and has been amended several times. International cooperation has led to increased recognition and protection of biodiversity worldwide. The desire to protect biodiversity often conflicts with other human interests. 	germ plasm Endangered Species Act habitat conservation plan Biodiversity Treaty

CHAPTER 10 Review

Reviewing Key Terms

Use each of the following terms in a separate sentence.

1. *keystone species*
2. *ecotourism*

For each pair of terms, explain how the meanings of the terms differ.

3. *hunting* and *poaching*
4. *endemic species* and *exotic species*
5. *endangered species* and *threatened species*
6. *gene* and *germ plasm*
7. *CITES* and *Biodiversity Treaty*
8. **Concept Map** Use the following terms to create a concept map: *biodiversity*, *species*, *gene*, *ecosystem*, *habitat loss*, *poaching*, *exotic species*, *germ plasm*, *captive breeding programs*, and *habitat preservation*.

Reviewing Main Ideas

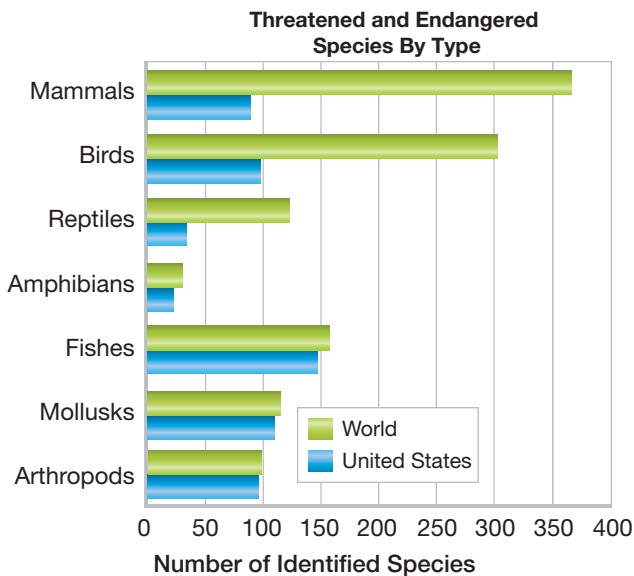
9. The term *biodiversity* refers to
 - a. the variety of species on Earth.
 - b. the extinction of the dinosaurs.
 - c. habitat destruction, invasive exotic species, and poaching.
 - d. the fact that 40 percent of prescription drugs come from living things.
10. Most of the living species known to science
 - a. are large mammals.
 - b. live in deserts.
 - c. live in the richer countries of the world.
 - d. are insects.
11. Some species are so important to the functioning of an ecosystem that they are called
 - a. threatened species.
 - b. keystone species.
 - c. endangered species.
 - d. extinct species.
12. When sea otters disappeared from the Pacific coast of North America,
 - a. the area became overrun with kelp.
 - b. the number of fish in the kelp beds increased.
 - c. the number of sea urchins in the kelp beds increased.
 - d. the area became overrun with brown seaweed.
13. Which of the following statements about the Endangered Species Act is *not* true?
 - a. Parts of an endangered animal, such as feathers or fur, may be traded or sold but only if the animal is not killed.
 - b. A species is considered endangered if it is expected to become extinct in the near future.
 - c. The federal government cannot carry out a project that may jeopardize an endangered plant.
 - d. A recovery plan is prepared for all animals that are listed as endangered.
14. Because of efforts by the Convention on International Trade in Endangered Species (CITES),
 - a. the poaching of elephants increased.
 - b. the cost of ivory worldwide increased.
 - c. the international trade of ivory was banned worldwide.
 - d. a captive-breeding program for elephants was established.
15. Emphasizing the preservation of entire ecosystems will
 - a. cause the economic needs of farmers to suffer in order to save a single species.
 - b. decrease biodiversity, especially in tropical rain forests, coral reefs, and islands.
 - c. throw the food webs of many ecosystems out of balance.
 - d. save many unknown species from extinction.

Short Answer

16. When was hunting a major cause of extinctions in the United States?
17. What are exotic species, and how do they endanger other species?
18. Why do biologists favor using an ecosystem approach to preserve biodiversity?
19. Describe three ways that preserving biodiversity can come into conflict with human interests.

Interpreting Graphics

The graph below shows the numbers of various types of species that are officially listed as endangered or threatened in the United States and internationally. Use the graph to answer questions 20–23.



20. **Critique** Do these numbers necessarily reflect *all* species that may be in danger? Explain your answer.
21. **Assess** Which types of species might be underrepresented in the graph?
22. **Analyze** Compare the United States and world listings. What trends do you see in the types of species listed in the graph?
23. **Evaluate** Given this information, which types of species might need further research worldwide?

Critical Thinking

24. **Comparing Processes** Read the passage in this chapter that describes current extinctions. How are the extinctions that are occurring currently different from most extinctions in the past?
25. **Analyzing Methods** With unlimited funding, could zoos and captive-breeding programs restore most endangered animal populations? Explain your answers.
26. **Determining Cause and Effect** How might the loss of huge tracts of tropical rain forests have an effect on other parts of the world?
27. **Literature** Try to remember or find some children's stories that include wild animals that are currently endangered, threatened, or extinct. Write a description of how these animals are portrayed in the stories. In your description, compare the animals in the stories to what you know about the real animals.
28. **Geography** Obtain a list of the plants and animals that are endangered in your state. Find out where these species live, and mark the locations on a map of your state. Research the effects of habitat loss on species in your county or in surrounding areas.
29. **Analyzing Limits** In 2010 the United Nations reported that governments were largely ignoring the Biodiversity Treaty, allowing the extinction of species to continue at an alarming rate. What does this fact reveal about the limitations of international treaties?

Analyzing Data

Use the table below to answer questions 30–31.

ESTIMATES OF KNOWLEDGE OF EARTH'S SPECIES				
Type of Species	Number of Species Described	Described Species as % of Total	Number Threatened or Extinct	Accuracy of Estimates
Bacteria	4,000	0.40	(unknown)	very poor
Vertebrates	52,000	94.55	3,843	good
Crustaceans	40,000	26.67	628	moderate
Plants	270,000	84.38	31,277	good

30. **Analyzing Data** Which of the types of species in the table are most accurately described? What do the numbers indicate about how well various species are studied?
31. **Applying Quantities** Which of the types of species may represent the greatest unknown loss of biodiversity? Which type of species is probably least important for further research into biodiversity?

Making Connections

32. **Writing Persuasively** Write a letter to the editor of a publication or to an elected representative in which you express your opinion regarding protections of endangered species that might affect your local area.
33. **Outlining Topics** Outline the major strategies for protecting biodiversity that have been described in this chapter. List pros and cons of each strategy.

CASE STUDY

34. Why might scientists want to consult with indigenous cultures when searching an area for new species?
35. Describe the controversy regarding who should profit from the discovery of new species. Who do you think should profit from such discoveries? Explain your answer.

Why It Matters

36. Why should we strive to maintain biodiversity?
37. Why is it of particular importance to protect hotspots?



STUDY SKILL

Use a Map As you review the chapter, refer to an atlas, to the maps in the Appendix, or to previous chapters about biomes to compare information. Draw your own map or make a list of the locations of some of the interesting species and ecosystems that you learn about.